

vously in one row in the centre, were fitted to the girders on the port and starboard sides. The rudder was lifted and the top pintle was welded up to the original size. A $\frac{1}{2}$ in. plate was fitted under the bottom pintle, and two stopper-plates were fitted to the rudder. The main engines were overhauled, and the main boilers repaired in several places. Repairs were also made to the steering-gear engine. The main and auxiliary steam-pipes were tested by hydraulic pressure to double the working-pressure. The tail-shaft was condemned and a new one fitted.

S.S. "*Tui*."—Almost the whole of the starboard side of the hull and about one-third of the port side, from the keel to the water-line, was renewed. The worm-eaten portion of the sternpost was cut out, and a new piece was let in and firmly bolted. A new piece was also let into the stem. A new rudder complete was fitted. The hull was sheathed with totara from the keel to the water-line. Most of the steering-chains were renewed. The engines were taken up on deck and thoroughly examined. Ten tubes in the boiler were renewed. The spare tail-shaft was fitted, and a new tail-shaft was made and placed on board. The stern-bush was renewed.

S.S. "*Waiotahi*."—5 ft. of sheathing over the keel-plate aft and 8 ft. of slipper aft were renewed; about 4 ft. of fourteen frames in the after hold was also renewed. The boiler was lifted and the cradle was shifted forward one floor, and new stop and wedge pieces were fitted to take the weight of the after end of the boiler. Eight strap-plates were riveted to the floor-plates and passed up through the bed-plate of the engine. Extra bolts were fitted in the reverse bars and floors under the engines. New bushes were fitted on the rudder-pintles, and several pieces of the steering-chains were renewed. Of the propelling machinery, both H.P. piston-rods and piston-valves were renewed. Both circulating-pumps were bored out, and the buckets were altered to suit rope-packing. The starboard air-pump and the water end of the general donkey were also bored out. The patch on the bottom of the main boiler was caulked all round, and one rivet in the patch was renewed. A new internal blow-down pipe was fitted, and a new seat in the main stop-valve. The spare tail-shafts were fitted, and the bushes in the brackets and lignum-vitæ in the stern-tubes were renewed.

S.S. "*Waireka*."—About 13 ft. of plating on the port side and about 42 ft. on the starboard side were renewed on the hull amidships. All dents in the hull-plating were straightened, and all loose and broken rivets were renewed. The bottom end of the sheathing-plate on the rudder were renewed.

Survey of Ships for Seaworthiness.

The number of special surveys of ships for seaworthiness totals twenty-eight. Most of the accidents were due to collisions, either with other vessels or with wharves or other objects. Fire and boiler-deterioration each accounted for five surveys. Other causes of accidents were due to grounding, breakages in engine-room, and loss of propeller-blades. One vessel only broke her tail-shaft.

Government Vessels.

The number of Government-owned vessels surveyed during the year totals seventeen. They are as follows: S.S. "*Amokura*," s.s. "*Ben Lomond*," o.e.v. "*Defence Launch A*," s.s. "*Earnslaw*," s.s. "*Hauraki*," s.s. "*Hinemoa*," o.e.v. "*Huia*," o.e.v. "*Irini*," s.s. "*Janie Seddon*," o.e.v. "*Mororo*," p.s. "*Mountaineer*," o.e.v. "*Patiti*," o.e.v. "*P.W.D.*," o.e.v. "*Reremoana*," s.s. "*Tawera*," and s.s. "*Tutanekai*."

Additional Steamers and Auxiliary-powered Vessels surveyed for the First Time.

There were forty-nine vessels surveyed during the year for the first time. With the exception of two all these vessels ply within restricted limits.

Sailing-vessels.

There were seventy-nine sailing-vessels surveyed during the year, and of this number four had not been surveyed in New Zealand before. The repairs and alterations of any consequence which were made to five of these vessels are as follows:—

Scow "Cathkit."—This vessel has been reconstructed from a hold scow to a deck scow. The hatchway has been removed, heavy ironbark deck-beams fitted, and a new deck laid. Heavy wooden stiffeners were fitted to the side of the centre-board casing.

Schooner "Hero."—The donkey-boiler of this vessel was repaired. The firebox was taken out, and the bottom portion in line with the firebars was cut out and a new portion was fitted. The firebox was replaced, and all new rivets put into the fire-hole ring and the bottom circumferential seam. Four vertical stays in the crowns were renewed, and two sludge-holes were compensated. The try-cocks and water-gauge mountings were renewed, and the steam-pressure gauge was tested. The boiler was tested by hydraulic pressure to one and a half times the working-pressure. A new mainmast was fitted to the vessel, and all rigging was overhauled.

Barquentine "Ilma."—Some of the outside plating of this vessel's hull was sheathed, and two new plates were fitted on the rudder. The plating on the lower portion of the collision bulkhead was renewed. Repairs were also made to the centre keelson, the ordinary frames and reverse frames, deck-beams, and stringers. Seven new diagonal tie-plates were fitted under the deckhouse, and stringer plates 103 ft. long and tie-plates were fitted on each side of the deck. A considerable amount of sheathing was put on the bulwarks, and the bulwark stanchions were repaired. Two new hawse-pipes were fitted. The steering gear, cables and anchors, windlass, and cable-compressors were overhauled. The vessel was fitted with new rigging throughout. The fore, main, and mizen lower masts were taken out and repaired and resteped. New fore, main, and mizen topmasts, new main gaff, new foreyard, fore upper and lower topsail-yards were fitted, and a full suit of sails placed on board. The jibboom was shortened by 8 ft. One hand force-pump and 100 ft. of $2\frac{1}{2}$ in. canvas fire-hose, with connections and nozzles, were placed on board. The boats were overhauled, and the boat-tanks tested.